Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-32 (cancelled)

33. (Original) A composition comprising an array of electrodes, each electrode comprising a covalently attached binding ligand and a covalently attached solvent accessible transition metal complex comprising a metal selected from the group consisting of manganese, technetium, rhenium, iron, ruthenium, osmium, cobalt, rhodium, iridium, nickel, palladium, platinum, copper, silver and gold.

34. (Original) A composition according to claim 33 wherein said solvent accessible transition metal complex has at least two coordination sites occupied by polar coordination groups.

35. (Original) A composition according to claim 33 wherein said solvent accessible transition metal complex has at least one coordination site occupied by a water molecule.

36. (Original) A composition according to claim 33 wherein said electrode further comprises a self-assembled monolayer.

37. (Original) A composition according to claim 33 wherein said solvent accessible transition metal complex is covalently attached to said electrode via a spacer.

38. (Original) A composition according to claim 37 wherein said spacer is a conductive oligomer.

39. (Original) A composition according to claim 33 wherein said solvent accessible transition metal complex is linked to said binding ligand to form a redox active complex.

40. (Original) A composition according to claim 33 wherein said binding ligand is covalently attached to said electrode via a conductive oligomer.

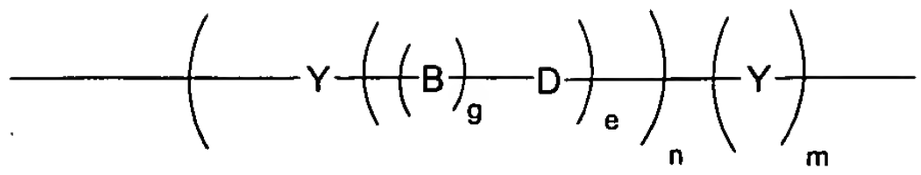
41. (Original) A composition according to claim 33 wherein said binding ligand will bind a protein.

42. (Original) A composition according to claim 33 wherein said binding ligand will bind a nucleic acid.

43. (Original) A composition according to claim 33 wherein said binding ligand is a protein.

44. (Original) A composition according to claim 33 wherein said solvent accessible transition metal complex is attached to said binding ligand.

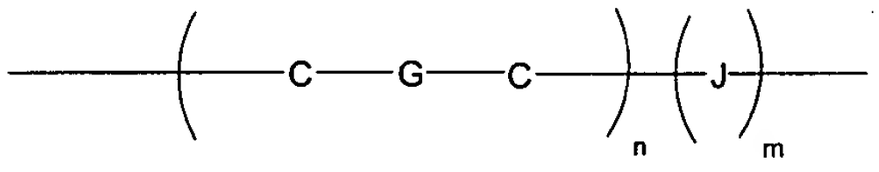
45. (Original) A composition according to claim38 wherein said conductive oligomer has the formula:



wherein Y is an aromatic group;
n is an integer from 1 to 50;
g is either 1 or zero;
e is an integer from zero to 10; and
m is zero or 1;
wherein when g is 1, B-D is a conjugated bond; and
wherein when g is zero, e is 1 and D is preferably carbonyl, or a heteroatom moiety, wherein the heteroatom is selected from the group consisting of oxygen, sulfur, nitrogen and phosphorus.

46. (Original) A composition according to claim 44 wherein said aromatic group is phenyl, g is 1, and B-D is an acetylene linkage.

47. (Original) A composition according to claim 38 wherein said conductive oligomer has the formula:



wherein
n is an integer from 1 to 50;
m is zero or 1;
C is carbon;
J is carbonyl or a heteroatom moiety, wherein the heteroatom is selected from the group consisting of oxygen, nitrogen, silicon, phosphorus and sulfur; and
G is bond selected from alkane, alkene or acetylene.

48. (Original) A composition according to claim 33 wherein said metal is gold.